



Best Management Practices for Construction and Development Projects

Crystal Darter

Crystallaria asperella

Common name • Crystal Darter
Scientific name • *Crystallaria asperella*
Federal status • None
State status • Endangered

Purpose and Use

The information in this document is to be used to help avoid and minimize species impacts due to construction practices. It is not intended as a guide to manage habitat for a given species. Please contact the Department of Conservation if habitat management information is needed. Because every project and location differ, following the recommendations in this document does not guarantee impacts will not occur to the species and additional information may be required in certain instances. Following the recommendations in this document does not complete Endangered Species Act consultation that may be necessary for species listed under the federal Endangered Species Act; please contact the U.S. Fish and Wildlife Service for more information.

Ecology

Crystal Darters have a large historic range, stretching from river basins in West Virginia west to Missouri and from Minnesota south to the Gulf of Mexico. In east-central to southeastern Missouri, they inhabit open channels of large, clear streams with low to moderate gradients and long stretches of silt-free sand and small gravel substrate. They prefer streams with moderately strong current and water depths of about 1 to 3 feet. The biology of this darter in Missouri is poorly known. Studies suggest Crystal Darters may bury themselves in sand during the day and become active at night. Crystal Darters forage on aquatic insects, especially midges, blackflies, and caddisflies. Adults are commonly about 6.5 inches in length. This species most likely spawns in early spring.

Reasons for Decline

Despite a historical range that included many rivers throughout east-central and southeastern Missouri, Crystal Darters have been considered common. Population declines have occurred as a result of habitat degradation from activities such as unrestricted stream access for livestock, stream channelization, illegal gravel operations, and lack of riparian corridors within the watershed. These activities have resulted in increased siltation and changes to channel morphology, thereby limiting habitat for spawning and foraging.

Specific Recommendations

The Crystal Darter prefers a very specific type of habitat in clean, unpolluted, free-flowing streams. Projects should be designed or altered to minimize any potential impacts to this species.

- Between March 15 and June 15, project activities should not occur below the ordinary high-water mark in streams within the range of the Crystal Darter.
- Erosion and sediment controls should be implemented, maintained, and monitored for the duration of the project.
- Maintain a riparian corridor of at least 100 feet from the edge of the stream or river.
- Temporary/permanent stream crossings must be designed to facilitate aquatic organism passage and sediment transport. A clear-span open channel crossing is preferred for permanent road crossings.
- For culvert installation, the bottom elevation of the structure should be approximately the same as the existing streambed to avoid upstream head cutting and provide fish passage at low flows.
- Minimize streambed manipulation or disturbance and avoid those specific habitats Crystal Darters inhabit.
- Dams and impoundment structures should not be constructed in streams.
- Gravel bar integrity should be maintained. If project activities occur on or near them, disturbance should be minimized.
- Avoid altering water levels in streams where Crystal Darters are found.

General Recommendations

Refer to *Best Management Practices for Construction and Development Projects Affecting Missouri Rivers and Streams*.

If your project involves the use of Federal Highway Administration transportation funds, these recommendations may not fulfill all contract requirements. Please contact the Missouri Department of Transportation at 573-526-4778 or the [Missouri Department of Transportation Environmental Studies webpage](#) for additional information on recommendations.

Information Contacts

For further information regarding regulations for development in rivers and streams, contact:

For species information:

[Missouri Department of Conservation](#)

Science Branch
P.O. Box 180
Jefferson City, MO 65102-0180
Telephone: 573-751-4115

For species information and Endangered Species Act
Coordination:

[U.S. Fish and Wildlife Service](#)
Ecological Services
101 Park Deville Drive, Suite A
Columbia, MO 65203-0007
Telephone: 573-234-2132

For Clean Water Act Coordination:

[Missouri Department of Natural Resources](#)
Water Protection Program
P.O. Box 176
Jefferson City, MO 65102-0176
Telephone: 573-751-1300, 800-361-4827

[U.S. Army Corps of Engineers](#)
Regulatory Branch
700 Federal Building
Kansas City, MO 64106-2896
Telephone: 816-389-3990

[U.S. Environmental Protection Agency](#)
EPA Region 7 Water Division
11201 Renner Boulevard
Lenexa, KS 66219
Telephone: 913-551-7977

Disclaimer

These Best Management Practices were prepared by the Missouri Department of Conservation with assistance from state and federal agencies, contractors, and others to provide guidance to those who wish to voluntarily act to protect wildlife and habitat. Compliance with these Best Management Practices is not required by the Missouri wildlife and forestry law nor by any regulation of the Missouri Conservation Commission. Federal laws such as the Clean Water Act and the Endangered Species Act, and state or Local laws need to be considered for construction and development projects and require permits and/or consultation with the appropriate agency. Following the recommendations provided in this document will help reduce and avoid project impacts to the species, but impacts may still occur. Please contact the appropriate agency for further coordination and to complete compliance requirements.